

WHAT IS CLAIMED IS:

- 1 1. A catheter for delivering a contraceptive device within a fallopian
2 tube, the catheter comprising:
3 an elongate tubular catheter body having a proximal portion adjacent a
4 proximal end, a distal portion adjacent a distal end, and at least one lumen; and
5 at least one coil disposed along the catheter body nearer the distal end than
6 the proximal end and encircling the lumen.
- 1 2. A catheter as in claim 1, wherein the distal portion of the catheter
2 body is more flexible towards the distal end of the catheter body than towards the
3 proximal end.
- 1 3. A catheter as in claim 2, wherein the distal portion of the catheter
2 body comprises multiple layers, and the at least one coil comprises one of the layers.
- 1 4. A catheter as in claim 3, wherein the multiple layers comprise:
2 an inner layer;
3 a middle layer; and
4 an outer layer.
- 1 5. A catheter as in claim 4, wherein the middle layer comprises the
2 coil.
- 1 6. A catheter as in claim 5, wherein the coil comprises at least one
2 material selected from the group consisting of Nitinol®, stainless steel, titanium and a
3 polymer.
- 1 7. A catheter as in claim 4, wherein the inner layer comprises at least
2 one material selected from the group consisting of Teflon®, etched
3 polytetrafluoroethylene and a fluoropolymer.
- 1 8. A catheter as in claim 4, wherein the outer layer comprises at least
2 one polyurethane material.

- 1 9. A catheter as in claim 8, wherein the polyurethane material
2 comprises Carbothane.
- 1 10. A catheter as in claim 2, wherein the distal portion comprises:
2 a first segment; and
3 at least a second segment distal to the first segment,
4 wherein the second segment is more flexible than the first segment.
- 1 11. A catheter as in claim 10, further comprising a third segment distal
2 to the second segment, wherein the third segment is more flexible than the second segment.
- 1 12. A catheter as in claim 11, wherein the distal portion comprises:
2 an inner layer;
3 a middle layer; and
4 an outer layer.
- 1 13. A catheter as in claim 12, wherein the middle layer comprises the
2 coil and the outer layer comprises at least one polyurethane material.
- 1 14. A catheter as in claim 13, wherein the at least one polyurethane
2 material comprises at least two polyurethane materials for conferring varying levels of
3 flexibility to the distal portion.
- 1 15. A catheter as in claim 13, wherein the at least one polyurethane
2 material has an increasing amount of flexibility from a proximal end of the distal portion to
3 a distal end of the distal portion.
- 1 16. A catheter as in claim 1, wherein a pitch of the at least one coil is
2 approximately 0.030 cm.
- 1 17. A catheter as in claim 1, wherein the distal portion of the catheter
2 body has a length of between about 1.2 cm and about 2.0 cm.
- 1 18. A catheter as in claim 17, wherein the at least one coil has a length
2 of between about 1.6 cm and about 2.4 cm.

1 19. A catheter as in claim 18, wherein the at least one coil extends
2 through at least part of the distal portion of the catheter body and at least part of the
3 proximal portion of the catheter body.

1 20. A catheter as in claim 19, wherein a distal end of the proximal
2 portion of the catheter body overlaps a proximal end of the distal portion of the catheter
3 body.

1 21. A catheter as in claim 18, wherein the length of the catheter body is
2 between about 43 cm and about 50 cm.

1 22. A catheter as in claim 1, wherein an inner diameter of the proximal
2 portion of the catheter body is smaller near the distal end of the catheter body than near the
3 proximal end.

1 23. A catheter as in claim 1, wherein the proximal portion of the catheter
2 body comprises at least one polyether block amide.

1 24. A catheter as in claim 1, wherein the proximal portion of the catheter
2 body includes at least one visualization marker near the distal portion for enhancing
3 visualization of a proximal-most end of the distal portion.

1 25. A catheter as in claim 24, wherein the visualization marker
2 comprises at least one radiopaque material.

1 26. A catheter for delivering a contraceptive device within a fallopian
2 tube, the catheter comprising:
3 an elongate tubular catheter body having a proximal portion adjacent a
4 proximal end, a distal portion adjacent a distal end, and at least one lumen, wherein the
5 distal portion is more flexible towards the distal end than towards the proximal end; and
6 at least one coil disposed along the catheter body nearer the distal end than
7 the proximal end and encircling the lumen.

1 27. A catheter for delivering a contraceptive device within a fallopian
2 tube, the catheter comprising:

3 an elongate tubular catheter body having a proximal portion adjacent a
4 proximal end, a distal portion of between about 1.2 cm and about 2.0 cm adjacent a distal
5 end, and at least one lumen, wherein the distal portion is more flexible towards the distal
6 end than towards the proximal end; and
7 at least one coil disposed along the catheter body nearer the distal end than
8 the proximal end and encircling the lumen.

1 28. A system for delivering a contraceptive device within a fallopian
2 tube, the system comprising:
3 a catheter comprising:
4 an elongate tubular catheter body having a proximal portion
5 adjacent a proximal end, a distal portion adjacent a distal end, and at least one lumen; and
6 at least one coil disposed along the catheter body nearer the distal
7 end than the proximal end and encircling the lumen;
8 a contraceptive device releasably disposed at least partially within the
9 lumen of the catheter near the distal portion; and
10 a deployment member in detachable engagement with the contraceptive
11 device for deploying the contraceptive device from the catheter.

1 29. A system as in claim 28, wherein the distal portion of the catheter
2 body is more flexible towards the distal end of the catheter body than towards the
3 proximal end.

1 30. A system as in claim 29, wherein the distal portion of the catheter
2 body comprises multiple layers, and the at least one coil comprises one of the layers.

1 31. A system as in claim 30, wherein the multiple layers comprise:
2 an inner layer;
3 a middle layer; and
4 an outer layer.

1 32. A system as in claim 31, wherein the middle layer comprises the
2 coil.

1 33. A system as in claim 32, wherein the coil comprises at least one
2 material selected from the group consisting of Nitinol®, stainless steel, titanium and a
3 polymer.

1 34. A system as in claim 31, wherein the inner layer comprises at least
2 one material selected from the group consisting of Teflon®, etched polytetrafluoroethylene
3 and a fluoropolymer.

1 35. A system as in claim 31, wherein the outer layer comprises at least
2 one polyurethane material.

1 36. A system as in claim 35, wherein the polyurethane material
2 comprises Carbothane.

1 37. A system as in claim 29, wherein the distal portion comprises:
2 a first segment; and
3 at least a second segment distal to the first segment,
4 wherein the second segment is more flexible than the first segment.

1 38. A system as in claim 37, further comprising a third segment distal to
2 the second segment, wherein the third segment is more flexible than the second segment.

1 39. A system as in claim 38, wherein the distal portion comprises:
2 an inner layer;
3 a middle layer; and
4 an outer layer.

1 40. A system as in claim 39, wherein the middle layer comprises the coil
2 and the outer layer comprises at least one polyurethane material.

1 41. A system as in claim 40, wherein the at least one polyurethane
2 material comprises at least two polyurethane materials for conferring varying levels of
3 flexibility to the distal portion.

1 42. A system as in claim 40, wherein the at least one polyurethane
2 material has an increasing amount of flexibility from a proximal end of the distal portion
3 to the distal end of the distal portion.

1 43. A system as in claim 28, wherein the proximal portion of the catheter
2 body includes at least one visualization marker near the distal portion for enhancing
3 visualization of a proximal-most end of the distal portion.

1 44. A system as in claim 43, wherein the visualization marker comprises
2 at least one radiopaque material.

1 45. A method for making a catheter for delivery of a contraceptive
2 device within a fallopian tube, the method comprising:
3 forming a distal portion of the catheter, comprising:
4 positioning a helical coil around an inner tubular member; and
5 placing at least one outer layer of material over the helical coil and
6 the inner tubular member; and
7 coupling a proximal portion of the catheter with the distal portion of the
8 catheter.

1 46. A method as in claim 45, wherein the inner tubular member
2 comprises a metal selected from the group consisting of Teflon®, etched
3 polytetrafluoroethylene and a fluoropolymer.

1 47. A method as in claim 45, wherein the helical coil comprises a metal
2 selected from the group consisting of Nitinol®, stainless steel, titanium and a polymer.

1 48. A method as in claim 45, wherein the outer material comprises at
2 least one polyurethane material.

1 49. A method as in claim 45, wherein coupling comprises overlapping a
2 distal end of the proximal portion of the catheter with a proximal end of the distal portion
3 of the catheter.

1 50. A method as in claim 49, wherein coupling further comprises heat
2 welding the proximal portion to the distal portion.

1 51. A method as in claim 45, further comprising coupling a first segment
2 of the outer material with at least a second segment of the outer material.

1 52. A method as in claim 51, further comprising coupling a third
2 segment of the outer material with the second segment.

1 53. A method as in claim 53, wherein the first segment of the outer
2 material has greater flexibility than the second segment, the second segment has greater
3 flexibility than the third segment, and the third segment is coupled with the proximal
4 portion of the catheter.

1 54. A method as in claim 46, wherein the distal portion of the catheter is
2 between about 1.2 cm and about 2.0 cm, the coil is between about 1.6 cm and about 2.4 cm,
3 and the catheter is between about 43 cm and about 50 cm in length.